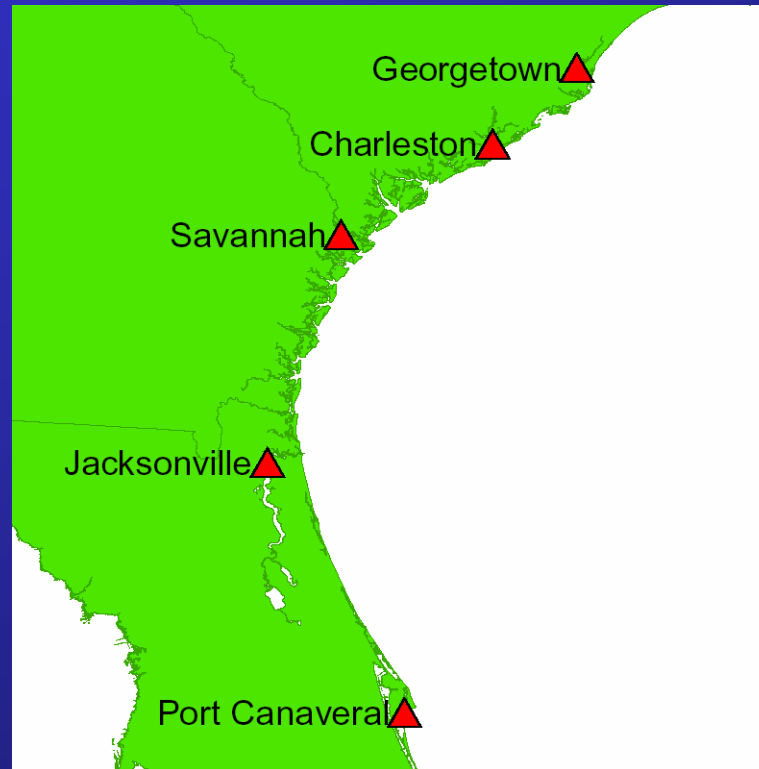


# Savannah Area Right Whale Ship Strike Reduction Measures

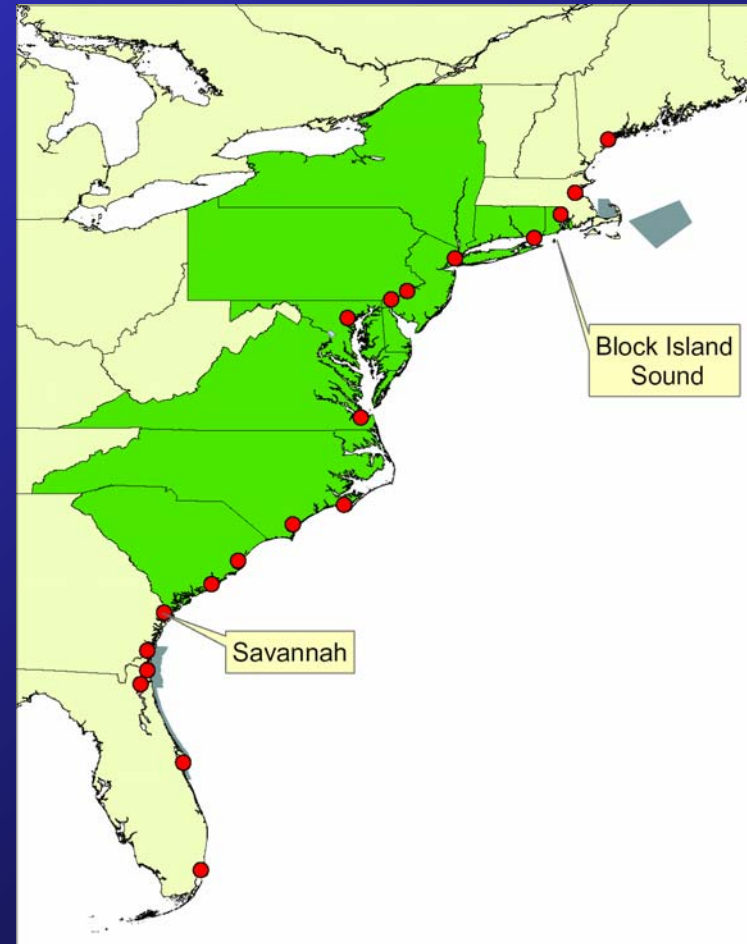


Barb Zoodsma  
NOAA Fisheries Southeast Region



# Mid-Atlantic Region

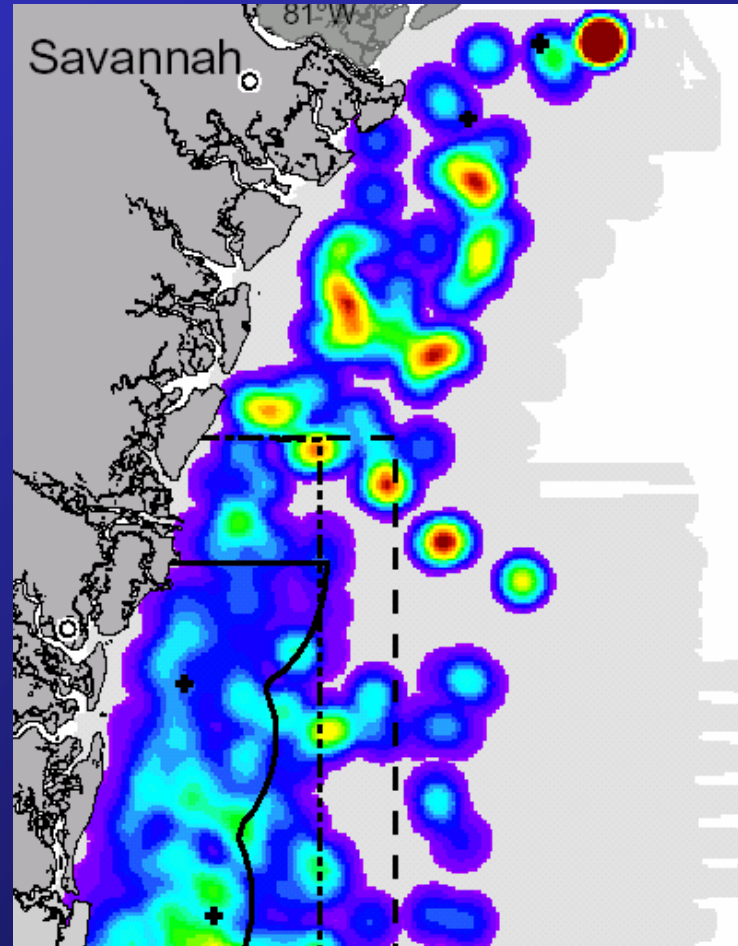
- Area inclusive of south and east of Block Island Sound, Rhode Island to Port of Savannah, Georgia
- Located between known high use areas in NE and winter calving area in SE



# Spatial Distribution of Sightings

Generally observed in waters relatively close to shore

–Effort may be a factor

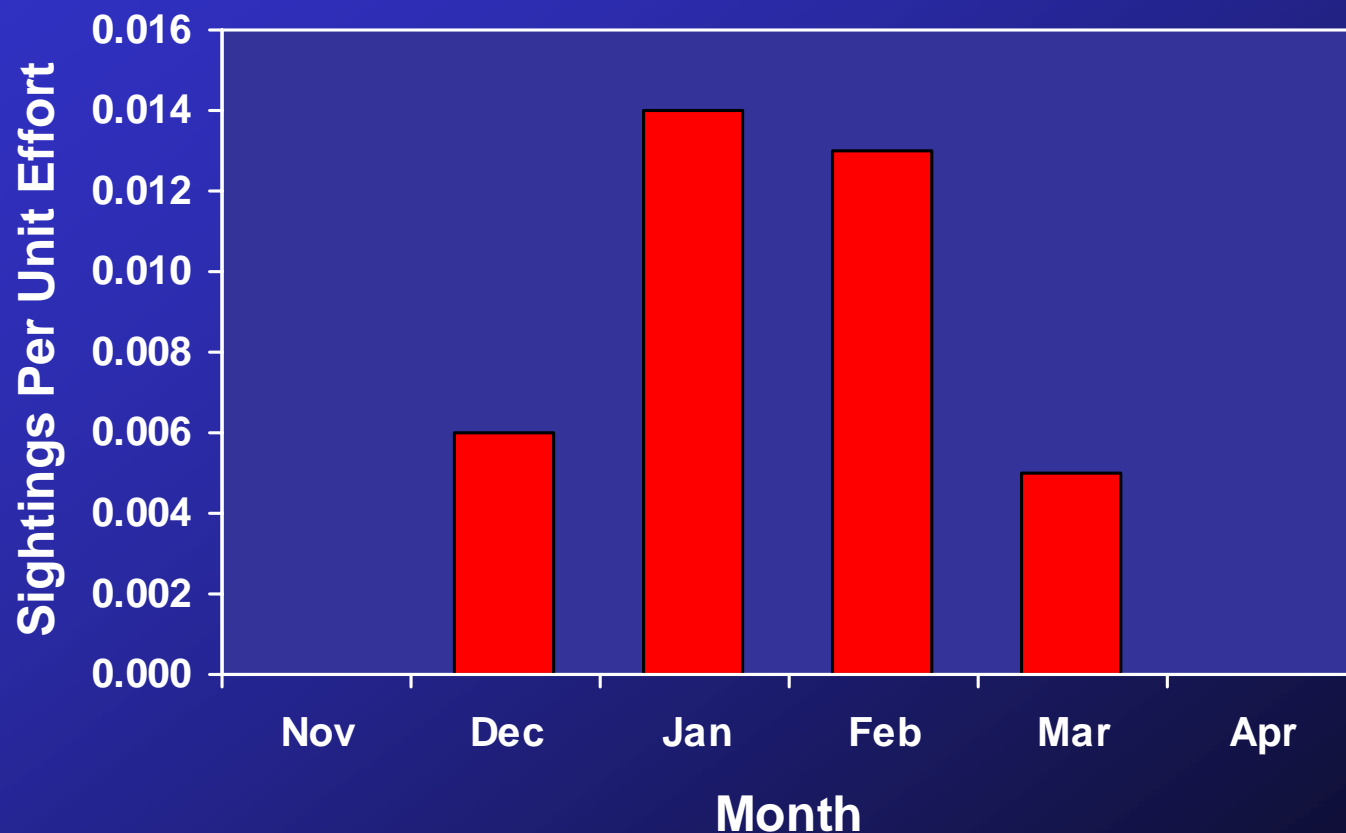


*Data Source: URI, NOAA Fisheries  
SPUE Graphic: FWRI*

# Seasonal Use of Savannah Area

- Migratory Corridor for *Pregnant Females* moving from NE to SE in fall (Nov)
- Likely Dec-Mar Resident Use by Calving Females –particularly in warm seasons
- Seasonal Use/Migratory Corridor by Other Population Segments
- Migratory Corridor for Mother/Calf pairs Departing Winter Calving Area in SE for NE Areas (March – April)

# Temporal Distribution of SEUS Right Whale Sightings



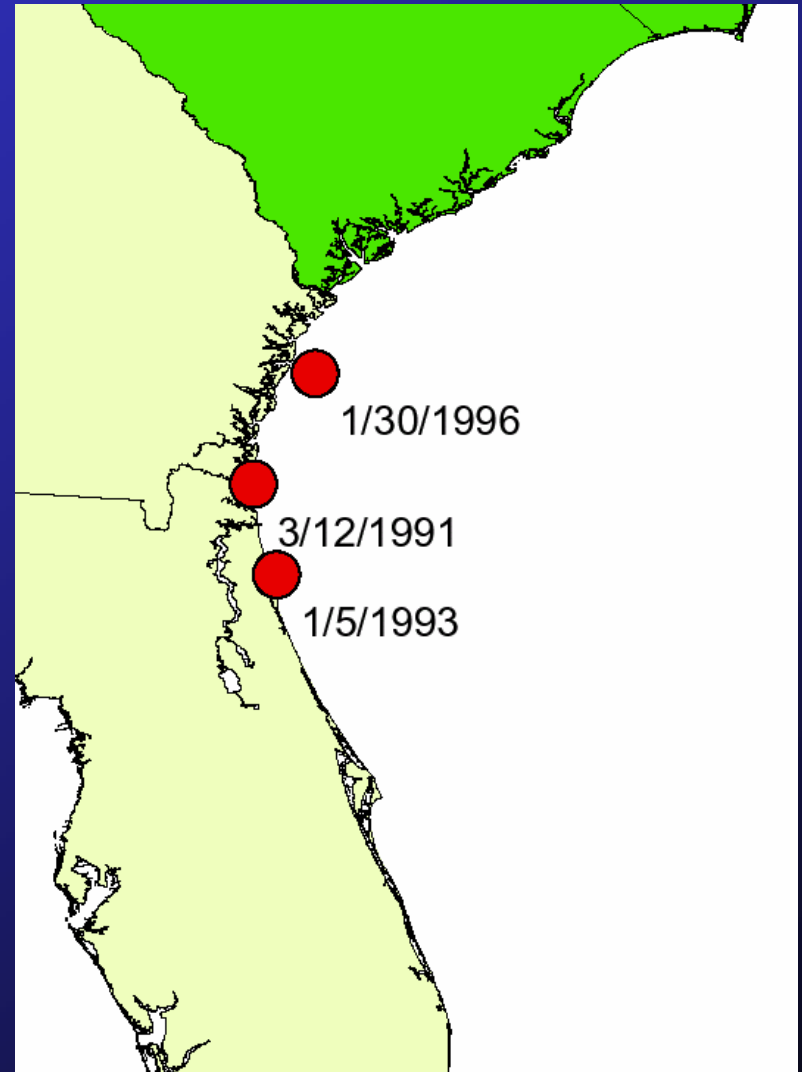
*Source: NMFS Unpub. Data.*

*Sightings through 01/02 calving season and south of 31°30' latitude*

# FL-SC Ship Strike Mortalities

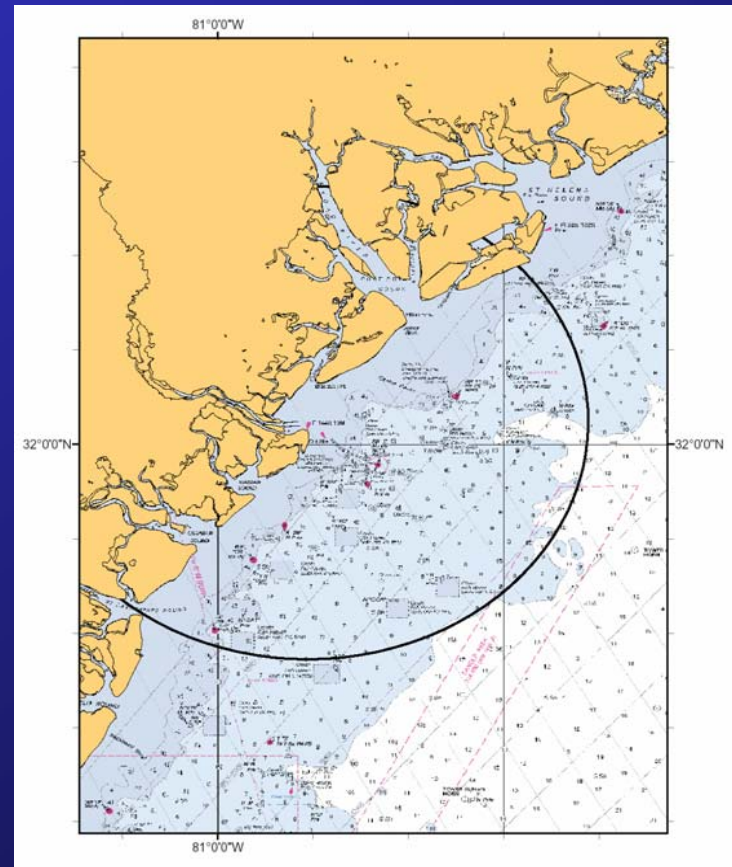
1991 - 2002

- 3 documented ship strike mortalities



# Savannah Seasonal Management Area

- 25 nmi arc from Port Entrance
- November – April
- Speed Restriction (10-14 knots)



# Savannah Increased Transit Time

Pilot Buoy @ 9.7 nmi

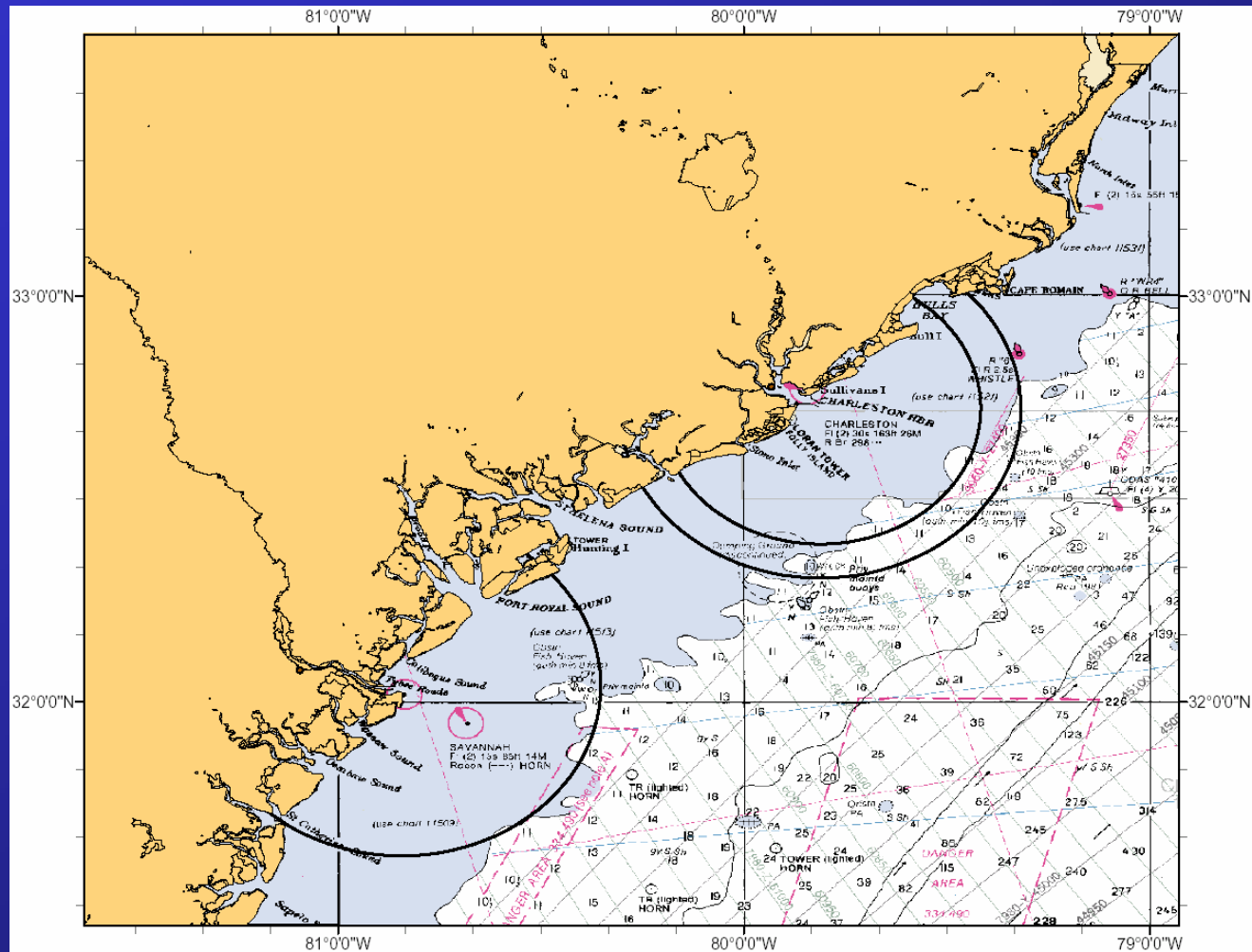
(Ships slow to 5-8 knots for pilot boarding)

	10 Knot Speed Limit			12 Knot Speed Limit		
	20 nmi	25 nmi	30 nmi	20 nmi	25 nmi	30 nmi
<b>Dry Bulk Panamex</b>	17	24	31	12	15	17
<b>Container (~3000TEU)</b>	17	41	57	12	32	43
<b>Tug/Barge</b>	16	15	17	0	0	0

*Russell et al., 2003*



# Proposed Savannah/Charleston Seasonal Management Area



# Charleston Increased Transit Time

Pilot Buoy @ 12.5 nmi

(Ships slow to 5-8 knots for pilot boarding)

	10 Knot Speed Limit			12 Knot Speed Limit		
	20 nmi	25 nmi	30 nmi	20 nmi	25 nmi	30 nmi
<b>Dry Bulk Panamex</b>	9	19	25	5	13	14
<b>Container (~3000TEU)</b>	9	24	48	5	18	36
<b>Tug/Barge</b>	9	12	14	0	0	0

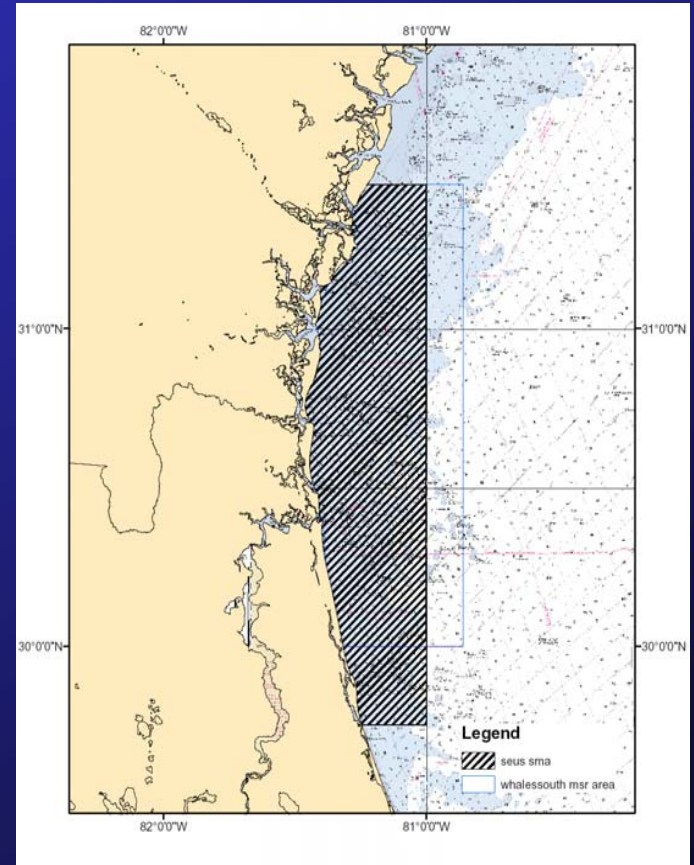
*Russell et al., 2003*

# SE US

## Seasonal Management Area

- Northern Boundary:  $31^{\circ}27'N$
  - Southern Boundary:  $29^{\circ}45'N$
  - Eastern Boundary:  $81^{\circ}00'W$
  - Western Boundary: Shoreline
- 

- ~24 nmi East of Jax, Fern. (jetties), and Bwk




# Brunswick Transit Time

Pilot Buoy @ 6.7 nmi (5 knots)

	10 Knots			12 Knots		
	20 nmi	25 nmi	30 nmi	20 nmi	25 nmi	30 nmi
<b>Dry Bulk Panamex</b>	25	28	34	16	16	17
<b>Tanker (Aframax)</b>	25	28	34	16	16	17
<b>Car Carrier</b>	28	34	42	20	21	25
<b>Tug/Barge</b>	10	13	15	0	0	0

*Russell et al., 2003*

# Proposed Operational Measures for MidAtlantic

- ~10-14 knot speed restriction in ~20-30 nmi radius around Port Entrances
- Vessels  65'



*Note: Precise size of area and timing to be determined pending further analysis of sighting data*

# Seasonality of Proposed Mid-Atlantic Operational Measures

PORT	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr
Providence/New London (Block Island)								
New York								
Philadelphia/Wilmington (Delaware Bay)								
Baltimore/Norfolk (Chesapeake)								
Morehead City, NC								
Wilmington, NC								
Georgetown								
Charleston								
<b>Savannah</b>								

*Note: Precise dates to be determined pending further analysis and modeling*

# Dynamic Management

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- Along the Atlantic seaboard within the EEZ
- Certain concentrations of right whales
- Outside Time or Area of SMA
- Precautionary area established for limited period of time
- Vessels must divert or restrict speed

*Distance, duration and speed subject to further analysis*

# Vessel Operating Concerns

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- Measuring impacts (additional time) for vessels complying with proposed vessel operating restrictions

**VESSEL TRAFFIC-MANAGEMENT SCENARIOS  
BASED ON RECOMMENDED MEASURES  
TO REDUCE SHIP STRIKES OF  
NORTHERN RIGHT WHALES**

A report submitted to the NMFS Northeast Implementation Team

Submitted by:

Bruce Russell<sup>1</sup>, Amy R. Knowlton<sup>2</sup>, and Jennifer Beaudin Ring<sup>3</sup>

<sup>1</sup>Maritime consultant  
<sup>2</sup>New England Aquarium  
<sup>3</sup>GIS consultant

December 2003

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International Fund for Animal Welfare  
Oak Foundation  
JS&A Environmental Services, Inc.



# Economic Concerns

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- Study: Economic Analysis
- Federal Regulations: Formal Economic Analysis



## **Economic Aspects of Right Whale Ship Strike Management Measures**

Final Project Report to the  
National Marine Fisheries Service, NOAA  
Order Number 40EMNF100235

Hauke L. Kite-Powell and Porter Hoagland  
Marine Policy Center  
Woods Hole Oceanographic Institution

April 2002

# Our Goals

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- **Explain Problem**
- **Explain Approach (Strategy)**
- **Initiate Dialog**
- **Industry Input**

